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Reader's Digest

World's Most Widely Read Magazine

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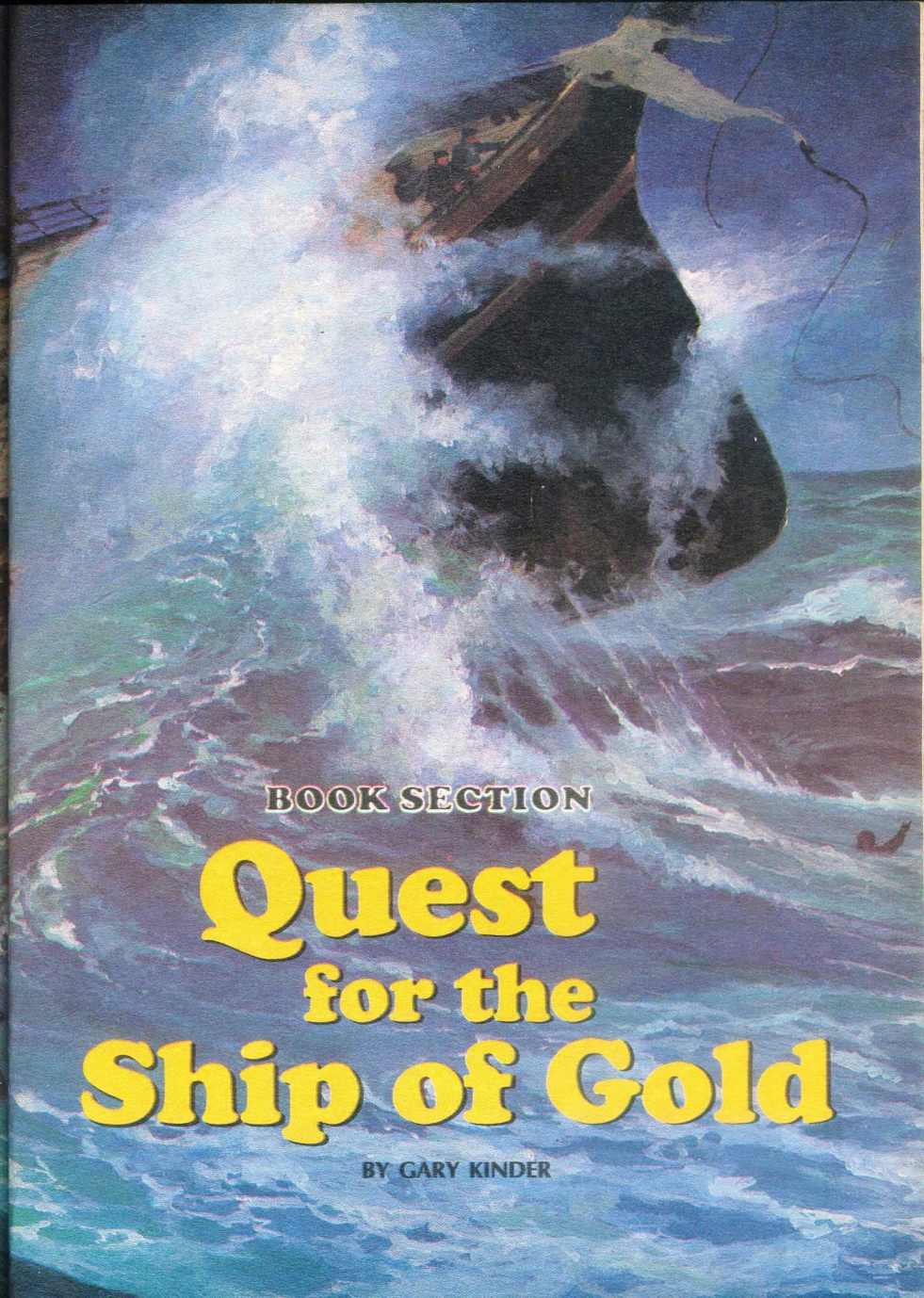
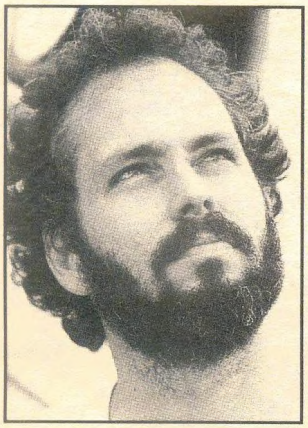


BOOK SECTION

Quest for the Ship of Gold

BY GARY KINDER

Imagine a mix of the most improbable characters: a California couple on their honeymoon cruise in 1861; a young inventor and two adventurous friends; and a gold-laden shipwreck that had sat on the ocean floor for more than a century. This is the true story of how their fates intertwined.



Tommy Thompson

AT SUNRISE a signal gun sounded at the mouth of Havana Harbour. At about 9:30, the bell of the *S.S. Central America* resounded across the bay, and Captain William Lewis Herndon ordered his crew to weigh anchor.

The ship was sleek and black. A red stripe ran nearly 85 metres stem to stern, and three masts about 25 metres high and one metre thick rose from her deck. Spider webs of shrouds and stays held her masts taut. She could sprout full sail when needed, but she also rippled with real muscle amidships: two enormous steam engines with pistons that travelled three metres on a downstroke and turned two paddle wheels three storeys high.

The *Central America* was part of a new generation of luxury steamers built to run passengers west and back, with an overland stage across the Isthmus of Panama, in the rush for California gold. In the four years since her maiden voyage, in 1853, she had already made 43 voyages, carrying over $50 million in California gold from Panama to New York City.

On this voyage she carried a publicly reported shipment of about three tonnes of gold bars and coins, some stamped at the new San Francisco Mint. Privately she carried much more. Many of her almost 500 passengers were returning miners who had hidden

in their trunks and carpetbags and money belts and pockets so much gold dust, nuggets, gold coins and gold bars it may have equalled the commercial shipment. One passenger carried $20,000 in gold. Another filled a satchel with 825 $20 double-eagle gold coins.

The *Central America* also carried an official cache of over nine tonnes of army gold.

Their first night out of Havana (a stop on the journey that began in Panama) was Tuesday, September 8, 1857. Captain Herndon entertained passengers at his table with tales of past adventures. He was a slight man who wore wiry gold spectacles. Thin-lipped and, at 43, balding, he looked more like a professor than a sea captain.

Yet Herndon had been in the Navy for 29 years. He knew sailing ships and steamers well, and had handled both in all weather. He had explored the Amazon from the headwaters of its tributaries in the Peruvian Andes to where the river emptied into the Atlantic, nearly 6500 kilometres away. He covered the distance by foot, mule, canoe and small boat.

Among the guests dining with him that evening were newlyweds Ansel and Addie Easton. A New Yorker, Ansel had gone to California early in 1850 and built a fortune selling furnishings to a new steamship line. Photographs of the time show Ansel with short dark hair swept back off his broad forehead, a goatee on his chin, and humour and serenity in his eyes.

His wife, Addie, was petite. She had large eyes and a trim mouth. Her dark hair was parted in the middle and twirled in soft buns about her ears. The Eastons had exchanged marriage vows only hours before their ship sailed from San Francisco on August 20.

Dinner conversation that September 8 turned to a topic popular on voyages: shipwrecks. There had been a scandal three years earlier when a crew abandoned a sinking ship and left 259 passengers to perish. Addie later recalled her host's charming transition to topics more pleasant. "I remember Captain Herndon's face as he said, 'I'll never survive my ship. If she goes down, I go under her keel. But let us talk of something more cheerful.' And the captain told us some delightful experiences he had had on his remarkable Amazon expedition."

Around midnight the wind freshened perceptibly from the northeast and blew hard through the night. The next day, Wednesday, a grey sky and sea surrounded them, and the wind continued at better than 20 knots. The Eastons awoke in the middle of the night, tossed about in their berths. All day Thursday the storm increased. As darkness fell, the rains began.

By Friday, the steamer pitched and rolled in churning seas. As her

bow plunged into each oncoming wave, water exploded high in the air, salt spray mixed with rain, and the wind drove it through the bare rigging with a furious whistle.

Struggling along the rainswept deck, passenger Thomas Badger, a sea captain himself, encountered the ship's chief engineer, George Ashby, hurrying to report to Captain Herndon. Above the shrill screaming of the wind, Badger predicted to Ashby that, hard as it now was blowing, it would blow harder still.

"Let it blow!" shouted Ashby. "We're ready for it."

But at that moment, Ashby was less convinced than he sounded. He had discovered something Herndon must know immediately. The ship had sprung a leak. Water was rising in the bilge, and Ashby could not find the source.

"We Are Sinking!"

DOWN IN the engine room, the coal stokers could not keep their footing, and as a result couldn't push their wheelbarrows of coal to the boilers fast enough to keep up steam. Pressure dropped in the boilers, and the paddle wheels turned more slowly.

Captain Herndon decided to use his sail to keep the ship's bow headed into the oncoming waves. He ordered the storm spencer, among the strongest and heaviest of sails, to be run up. When the sail was unfurled, the winds filled it with such fury that the canvas soon exploded into rags.

In a desperate attempt to build steam pressure, the crew formed a bucket brigade to pass coal hand-to-hand, from the bunkers where it was stored to the fire room. But around noon, water overflowed the bunkers and forced the men to flee the area.

About the same time, Addie Easton recalled, "the vessel suddenly careened to one side. Looking towards our porthole, I noticed that it was entirely underwater."

"Ansel," she cried, "we are sinking!"

The steamer had listed far to starboard. Forgetting their seasickness, the couple threw blankets over their nightclothes and hurried to the central dining saloon. The anxious faces of their fellow passengers reflected the awful truth.

"I saw that we were in imminent peril," Addie wrote.

Soon water had swamped the already fading fires that powered the engines, and by late afternoon the ship's great paddle wheels ceased to turn. Captain Herndon appeared at the door of the saloon where most of the passengers were huddled. He announced loudly but calmly, "All men prepare for bailing the ship. The engines have stopped, but we hope to reduce the water and start them again."

Herndon made every effort to reassure his passengers. "She's a sturdy vessel," he told them, "and

if we can keep up steam we shall weather the gale."

Many men in the saloon stood up immediately, pulled off their coats and went to work. Ansel Easton rose with them. Before he could leave, Addie looked into his eyes and spoke her heart: "Ansel, if you hadn't married me, you wouldn't have been in this trouble!"

"If I knew it all beforehand," replied Ansel, "I should do the same again." He kissed his wife and joined the other men.

In all parts of the ship, hundreds worked in the bailing brigades. A good part of them were miners. They had left farms and other jobs where work was hard to seek their fortunes in the Sierra Nevada, where the work proved even harder. They felt themselves a special breed: willing to enter the unknown, to face hardship and to endure. There on the *Central America* was the fruit of years of their effort. They weren't about to let the sea claim it without a fight. The men sang as they worked, their voices rising above the storm.

By half past five, however, the ship was listing so far over that her deck was at a frightening angle to the sea, and her three huge masts tilted out over the water. In an effort to right his ship, Captain Herndon ordered the foremast cut away. It fell, but instead of drifting free as he hoped, it snagged in the rigging. The churning sea began to pound the mast against the hull.

By nightfall, most of the men had been bailing without rest for eight hours. At about eleven o'clock, Addie Easton remembered the bottles of wine and boxes of biscuits she and Ansel had received as wedding presents. She stumbled down to her stateroom, hauled up the gift hampers and distributed what she had to the labouring men.

"All that fearful night we watched and prayed," Addie wrote of a time she was certain they were doomed. "My dear husband and I talked calmly of our friends, of our brief happiness together and hopes in the future. We resolved that when the moment came, we would tie ourselves together and the same wave should engulf us both."

"Sail Ho!"

CAPTAIN Herndon cheered on the men in the bailing lines and told the passengers in the saloon they must not abandon hope. He knew that every bucket of water tossed back into the sea gave the ship and her passengers a few more seconds afloat. By morning on Saturday, September 12, winds had dropped. Herndon ordered the flag hoisted upside down, a signal of distress to passing ships. If he could keep the steamer afloat just a little longer another vessel might spot them. That was their only hope now, as they were clearly losing the battle with the sea.

The lull in the storm soon passed, and the winds returned

with great fury. Around noon, the cry rang out, "Sail ho!" Approaching them was the *Marine,* a battered two-masted vessel hauling molasses from Cuba to Boston. Captain Hiram Burt and his crew had been struggling against the same storm that was sinking the *Central America.* Heavy seas and winds had already torn away much of the *Marine*'s sails and rigging. Captain Burt could barely keep his own ship afloat.

Seeing the distress signal from the *Central America,* he tried to manoeuvre towards her through the high waves and managed to get within about 30 metres. "I shall stay by you as long as I can!" Burt shouted.

Herndon faced a grim situation. His only salvation was a badly crippled ship much smaller than his own. The only way to get his passengers to the *Marine* was to ferry them by lifeboat across a steadily widening stretch of open water with waves up to nine metres high. He had to think carefully about who would be allowed to leave in the lifeboats, whom he could trust to handle them — and, even more important, whom he could trust to return.

He ordered all women and children to be ready to abandon ship. To get them into the boats, they'd have to be lowered by rope one at a time from the deck, while the oarsmen tried to keep the lifeboats from crashing into the ship's hull.

"I left in the third boat," Addie Easton remembered. "I said however to Ansel, 'I don't want to go till you do.' He said, 'You had better go now.' I then kissed him and said, 'I'll pray for you.' In a moment I was swinging from the deck, and when a swell brought the little boat underneath, the rope was lowered and I dropped in the bottom of the boat. It was a dreadful moment for we were in great danger of swamping or being stove to pieces."

Fifty-nine women and children had been ferried to the *Marine* when passenger Theodore Payne said to Captain Herndon, "Thank God, the women and children are all off, and we are strong."

Herndon said, "Yes, thank God." Then he surprised Payne. "You take the next boat," he said. He had a favour to ask. He told Payne to go to his office and fetch his gold watch and chain.

"If you are saved," he said, "deliver them to my wife. Tell her ..."

But then his voice faltered and he stood silently saying nothing. When he could speak again, he asked Payne to meet the president of the steamship company to explain what had happened. Then he walked away a few steps and sat down on a bench, his head in his hands. He remained there only a few moments to gather himself together. Then he rose and steadily resumed giving orders.

There was a rush by the remaining men to jump into the lifeboats, though some felt safer on the big ship. The lifeboats seemed so small next to the steamer, and the *Marine* was by now a long way off and drifting further.

Passengers had to decide whether to take their hard-won riches or leave them behind. Even in small amounts, gold could sink a weak swimmer or exhaust a strong one. It was gold or life. As if to dramatize their dilemma, some men stood on the deck and, in a daze, tossed gold coins and gold dust into the wind. Others in their despair dumped their gold pieces onto the cabin floors.

On the *Marine,* Addie Easton stood among the women on the deck, searching for the face of her husband as each lifeboat brought more survivors. It was growing dark, and some of the boatmen were too exhausted to return to the ship.

During the storm, the *Marine* had drifted several kilometres off, and the men had been rowing with no rest for many hours. Their muscles were in knots from pulling against the sea. Besides that, the lifeboats were leaking badly from being smashed against the sides of the two ships.

But a group of four crewmen, led by bosun John Black, agreed to make one final trip. Hours later, the men and women aboard the *Marine* heard the creaking of oarlocks as the boat glided back into the light of the ship's lamps. The men were beyond exhaustion, their boat beaten by the sea and filled with water — but empty of further survivors.

Black looked up at the men and women gathered on deck. "The steamer," he said, "has gone down, and every soul on board her is lost."

One of the men claimed that in a flash of lightning he had seen Captain Herndon standing on the wheelhouse, hat in hand, as a monstrous wave exploded across the deck of the *Central America*. Moments later her stern sank, and with her graceful bow aimed towards the dark heavens, she began a slow spin to the floor of the sea, hundreds of metres below.

Heartland Dreams

THE SINKING of the *Central America* was one of the biggest news events of the 19th century. Of the nearly 600 souls aboard, only about 150 survived. It is still the worst peacetime disaster at sea in the history of US shipping, not only because of the loss of life but because of the financial havoc it wrought.

By the following century, the *Central America* had become a legend in the lore of shipwrecks and sunken treasure. Many years later — and hundreds of kilometres away from where the ship went

down — a young American named Tommy Thompson was fascinated with the deep ocean.

Tommy had been born on April 15, 1952, 40 years to the day after the *Titanic* went to the bottom of the sea. By the time he was old enough to hold a screwdriver, he was either building something or fixing something or tearing something down to build over again. One day when Tommy was eight, a telephone man came to the door and told his mother it was against the law to have two telephones unless she paid for them.

Mrs Thompson said, "We don't have two phones."

The man took her outside and showed her a line coming off the telephone pole and looping into the window of Tommy's room.

It turned out that Tommy had rigged up a phone inside an old jewellery box his mother had given him. The man spoke with him, then told his mother, "This kid knows more about telephones than I do. Why don't you just let him play with it?"

Eventually Tommy focused his mechanical aptitude into a goal — becoming an ocean engineer. He enrolled at university and became the protégé of a top marine engineer. This man held a special class for Tommy three times a week and opened each session with a question: "Well, Tom, how are we going to explore the deep ocean?"

Tommy's mentor had told him that jobs in the ocean community were few. To get experience, he might have to volunteer with anyone working in the ocean. Tommy was advised to try the treasure hunters in Key West, Florida, most notably one named Mel Fisher.

A year after graduating from college in 1975, Tommy went to Key West, where his childhood friend Barry Schatz was working as a reporter. During this trip Tommy met Mel Fisher. Fisher was perhaps the most colourful of all characters in Key West. He loved diving and had a lust for Spanish treasure, and for years he had been chasing the treasure trove of a galleon called *Nuestra Señora de Atocha,* which sank off the Keys in a hurricane in 1622.

Tommy took a job working as a consultant to Fisher. He spent a lot of time on the ocean bottom developing new detection equipment. What he saw of Fisher's operation fascinated him.

To his methodical, scientific mind, the techniques most people used seemed completely haphazard. Fisher's crew would scour

holes into the sea floor, and within days or even hours sand would fill the holes, and Fisher, who would mark the area with buoys, would have a less than precise record of where they had just searched.

Tommy's thoughts and observations about better ways to search for shipwrecks began to fill notebooks. But he had many other projects he hoped to explore: he was interested in searching the deep ocean, machine design and even anthropology. Since he was 13, he had wanted to work at the Battelle Memorial Institute, a prestigious engineering research organization. In 1981, he applied for a job.

Don Frink, head of Battelle's equipment development section, was looking for a young engineer who had worked in a garage or a shop, or was raised on a farm. He wanted the kind of guy who, when a tractor busted in the afternoon and had to be back out in the field by sunrise, could fix it with whatever he could find in the barn. Battelle engineers didn't only wallow in theory; they also had to

put the thing on a table, flip the switch and have it perform. Once it performed, it had to pay for itself.

Frink thought Tommy fit his formula for new engineers. But he was afraid that after he had brought the young man along and invested a lot of money in him, Tommy would suddenly be gone.

"No," said Tommy, "I've always wanted to work at Battelle." Frink decided to hire him.

Tommy had a good friend in town, a geologist named Bob Evans. Occasionally Tommy putt-putted on his motor scooter over to see Bob. Their tongues would wag far into the night. They'd talk about all kinds of things, from outer space to the deep ocean to diamond mines in Canada. Bob would get so cranked up, his shoulder-length blond hair would bounce, and his droopy moustache would jiggle.

During one of these visits Tommy told Bob his ideas about searching for lost wrecks. He said that to be successful you had to analyze and reduce risk. He and Bob discussed how this could be done. The more systematic approach would be to look for ships where storms couldn't scatter the remains, where the bottom was hard and currents slow.

Tommy decided that probably the best place to search was the deep ocean. Of course it was also a frigid, dark, hostile world where man could venture only with the most sophisticated machines. And yet . . . that was the appeal for him. The young engineer didn't care only about the wealth finding a treasure could bring. He also saw it as an opportunity to be the first to establish a working presence in the deep ocean.

Soon Tommy was spending more and more of his spare time studying ships that had gone down in very deep water. For each ship he wanted to know: was there historical documentation to determine that it carried a cargo of substantial value? And did the ship sink in a spot that was at least roughly definable?

As he searched, one ship that rose to the top of his list was the sidewheel steamer S.S. *Central America*. His dream started to come into focus. With the *Central America*'s fabled gold as an incentive, Tommy thought he could raise the money to build a new underwater machine, one that could work at depths previously unattainable.

The Time Is Now

TOMMY worked ten- to 12-hour days and sometimes spent weekends at Battelle. His job was to research the feasibility of mining the deep ocean, and part of the work involved talking to scientists and engineers around the country. Concluding that "radically new technologies" were needed,

Tommy discovered fresh clues on how to approach the challenge of excavating a deep-water wreck like the *Central America*.

No one in the world had the technology to work on the floor of the deep ocean with the precision Tommy envisioned. He wanted a machine that could withstand the pressure of the deep ocean and, using still cameras, video cameras and good lighting, pick carefully through wreckage with manipulators strong enough to lift a ship's bell yet sensitive enough to pluck a coin from the debris. Then he wanted it to take off and swim to another area of the wreck and do it again.

Ansel and Addie Easton

The US Navy had a manned submersible, *Alvin,* for such missions. But it was then 20 years old and took two hours to get to the bottom, two hours to come back up, and allowed the tiny crew limited work time on the bottom.

Tommy believed robots were the answer — underwater Remotely Operated Vehicles, or ROVs. But first he had to locate the shipwreck. That would require intricate technology: the ability to find things under thousands of metres of water.

Tommy's work at Battelle exposed him to ocean technology long before it hit the marketplace. He knew about the SeaMARC, a sonar scanner that could cover a lot of ocean in a reasonable time. There were two SeaMARCs in existence. But only one could be used for deep-water searches, and it was no good for Tommy's top-secret purposes. Because government funding was involved, its data would soon be public knowledge. Mike Williamson, who had worked on related technology, wanted to raise a million dollars to acquire a SeaMARC of his own. About this time, he got a call from Tommy.

To Williamson, Tommy Thompson's project was a treasure hunt, and Williamson did not believe this was a proper pursuit. But Tommy went after Williamson the same way that he serenaded suppliers who did consulting for the government and large corporations: he kept in touch and asked intelligent questions.

By the autumn of 1983, Tommy

had talked with Williamson frequently by phone and had met him three times to discuss the capabilities of deep-water sidescan sonar, the technology of SeaMARC. Williamson was eventually won over. Suddenly Tommy could see all of the pieces coming together. "I started to realize that with a lot of effort and the right group, we could make it happen," he said. "I finally decided that the time was now."

The *Central America* was believed to have foundered roughly 320 kilometres northeast of Cape Romain on the South Carolina coast, in the middle of a geographical feature called the Blake Ridge. Bob Evans did some research at a geology library and discovered that the Blake Ridge sedimentation rates were no more than a centimetre every thousand years; the ship and its treasure, therefore, were not likely to be buried.

By the autumn of 1983, Bob's geology consulting practice had dwindled and, as he put it euphemistically, "I had more time on my hands." He threw himself into studying *Central America* survivors' accounts to try to narrow the search area.

In the library, Bob studied rolls of microfilmed articles from the front pages of old papers: *Frank Leslie's Illustrated Newspaper,* the New York *Tribune,* the New York *Times.* When he saw something pertinent, he made a copy and took it home for study. Then he would place the information on a wall chart called the Data Correlation Matrix.

Before long, Bob could recite from memory extended passages of survivors' accounts. Inside his head the voyage of the *Central America* began to live as she steamed north into the storm, lost power and sank. The Data Correlation Matrix expanded to take up an entire wall, floor to ceiling, in Bob's study, each entry a specific reference to the storm, the condition of the ship, or a statement of location.

To disguise where the data had come from, he and Tommy created a reference code, a series of nine letters and numbers. They could trace information back to its source, but no one else could decipher the code. Said Bob, "We were very, very jealous of our sources at this point, because we knew there were other people thinking about the *Central America.*"

Joyous Reunion

IT WAS September 12, 1857. At about six in the evening, a man-of-war bird tumbled from the greyness, then swooped across the quarterdeck, grazing Captain Anders Johnsen's shoulder as he stood with the helmsman and other crewmen on the deck of the *Ellen.* Seamen's superstitions had long held

that an encounter with birds far at sea was a harbinger of danger, but Johnsen at first ignored the bird. The creature flitted into the rigging, beating its wings incessantly, and then it dived again and circled the captain's head.

As Captain Johnsen explained later, "I regarded the bird as an omen and an indication to me that I must change course. I accordingly headed to the eastward direction. I should not have deviated from my course had not the bird visited the ship."

Around 1am on Sunday, with the helmsman on deck with Johnsen, and the rest of the crew asleep below, strange cries near the vessel startled them awake. Johnsen recalled, "In a moment the agonizing shrieks, as it seemed of a hundred human voices, were plainly distinguishable. I at once knew that we must be in the vicinity of a wreck, and immediately roused every man on board. In

less than a minute I found that we were surrounded with persons floating in the water."

By morning, Johnsen had rescued 49 of *Central America*'s passengers and crew. "After picking up all the persons I could discover," Johnsen said, "I sailed for Norfolk."

That same morning on board the *Marine,* Addie Easton recalled: "Imagination painted the picture of the sinking of the ship over and over. The captain's kindness I can never forget." Addie later wrote of Captain Burt's "efforts to quiet my fears, and comfort me in every way in his power." She recalled, "During the long night hours, he would tell us of the many wonderful rescues he had known and always ended with cheering words."

Five days later, the *Marine,* nearing Norfolk, was boarded by a harbour pilot who was to guide them to the docks. He brought with him news that 49 survivors from the *Central America* had arrived in Norfolk aboard the boat *Ellen.* The harbour pilot couldn't tell them any of the names.

"I felt very sad and downcast and scarcely spoke," wrote Addie Easton, "for I knew my hopes were soon to be realized or I must yield to despair."

With some of the women and children from the *Central America,* she was taken to the immense parlour of Norfolk's National Hotel. As Addie stood with the other survivors, a man rushed into the parlour and ran towards her. It was Ansel Easton. He embraced his bride of four weeks.

Addie later wrote: "We wept, and for several nights after, we could neither of us sleep. My watch, my beautiful ring, wedding presents and many other things I valued from their associations were all lost. Though I shall never behold them again, I still have the blessed privilege of preserving them in memory and I have my darling husband, the most precious jewel of all."

Ghostly Images

IN JUNE 1986 the *Pine River* set out from Jacksonville, Florida. It was a flat-bottomed boat built to ferry supplies to the oil rigs in the Gulf of Mexico. Now her homely exterior concealed a climate-controlled room filled with sophisticated electronic equipment manned 24 hours a day by Mike Williamson and his sonar tech crew of 11.

Williamson was an expert on deep-water sonar. But Tommy, with $1.4 million in his pocket from partners who counted on him, constantly pushed Williamson to rethink his approach to deep-water search. Tommy had been granted a leave of absence from Battelle. He'd spent two years meeting lawyers and raising funds. He concentrated his efforts on the local community, with amazing success.

upright on the bottom, a dark, humped shadow amidships indicating what could be paddle wheels. They designated this target A2.

Because A2 looked so promising, Williamson suggested shutting down the broad swath survey midsearch and going back to run high-resolution images of A2. This would show detail such as masts or debris from the engine works or an anchor.

"We were really sure A2 was a sidewheel steamer," one of the technicians remembered. "You could actually see this wheel on the vessel. It was like being in Eden and not eating the apple."

But Tommy wanted to stop for nothing, not even a promising anomaly. He planned to complete the scan of the entire probability map, then analyze each of the targets, compare them with one another, and pick carefully the order of verification with the high-resolution passes. "We were extremely excited about the results so far," Tommy said, "but you don't want to be like a treasure hunter, thinking everything you see is the main pile."

At Tommy's insistence, they completed most of the search grid, and then went back to shoot a high-resolution image of every major target already imaged. Two of the targets lay in the southwest corner of the search map, 65 kilometres away. That was a long trip that would eat up precious time, and they had little of that left. But Tommy demanded they shoot closer images of those targets, designated F and G.

At target F, the recorders on the monitor suddenly began to paint what someone later described as "a real banger." It reflected sonar waves in a way that suggested the target was something more than mere ocean floor. The watch leader recorded that it was "believed to be a geological anomaly with no cultural value." It was big and it was highly reflective, but maybe too reflective for an old wooden shipwreck.

Finally, Tommy had high-resolution images of every major target they had located. With only three or four days remaining, he agreed to put cameras down on target A2 to get a better view.

At around 120 to 150 metres, the ocean squeezes out the last particle of natural light, and below that everything moves in blackness. The SeaMARC flew through that blackness, shooting sound waves at the ocean floor, and the system recorded the behaviour of those sound waves as they encountered hard objects. That's what was so frustrating about sonar: you just couldn't quite *see*. Not the thing itself.

But now they clamped lights and two cameras — one video and one 35mm still — to a hydrody-

namic sled and trailed the sled in the bottom darkness nearly 2740 metres below. Tommy and the technicians sat around, talking and watching sea-cucumber trails on the ocean floor scroll by on the monitor.

Then one of the technicians said in a hopeful voice, "What are the chances of us picking up an anchor chain and then finding a shipwreck attached to it?" About five heartbeats later, big and dark and right in the middle of the monitor, an anchor chain appeared.

"Look at that!" yelled the technician.

Everybody was riveted to the monitor now. The camera followed the chain for about 30 metres, until it ran right up to a ship's bow. They still could see across part of a deck to what looked like cable shrouds from a mast. As the camera glided forward, the decking appeared to be collapsed, and some observers thought they saw cargo in the hold.

Then the image was gone. As if they had just discovered how magicians put rabbits into hats, one technician said, "What are the chances of us seeing," and he quickly looked at the monitor, "a ... paddle wheel!"

Then another: "How about a ... pile of gold!"

But, despite hours of searching, the magic never worked again. The season ended, and they headed back to shore.

Tommy's next challenge was to create, by the following summer, a Remotely Operated Vehicle that could go that deep and perform complex work.

Sprint to Sea

ON DECEMBER 13, 1986, Tommy called a meeting of the partnership, now named Columbus-America Discovery Group. He showed colour slides of some of the more interesting sonar targets, and he finished his presentation with the series of high-resolution images they had of target A2.

One partner tried to remain skeptical but couldn't. "This was the *Central America,* there was a 90 percent probability!" he remembered. "We all walked out of there feeling like, 'We've got it!'" In less than a month, Tommy sold 41½ of the 50 Recovery Phase units he'd offered at $72,000 a unit, all to partners who had invested in the Search Phase.

Tommy now had to design and build an ROV. In the summer of 1985, two ROVs called SCARAB I and SCARAB II had gone down 2042 metres to the Atlantic Ocean bottom to film the wreckage of Air-India Flight 182, recover the cockpit voice and data recorders and retrieve 30 pieces of the wreck. Even then, the SCARABs had only clutched small pieces of the debris or dropped bridles around larger pieces, which a crane then raised. Tommy wanted

more: a machine to pick up and move individual items, to store them for ascent to the surface, to handle power grabbers and other tools, and to film and photograph itself at work.

Tommy lined up specialists to help him, including an old colleague from Battelle, Don Hackman. But in January 1987, Tommy heard a rumour through the deep-ocean grapevine that another group was preparing an expedition to search for the *Central America*.

Now he met his partners to decide whether to make an all-out sprint to get to sea and secure Columbus-America's claim to the wreck site. Admiralty lawyers had told Tommy that before he could claim A2 he had to have a piece of the wreck to take into court. If they implemented this emergency plan, they would have to drastically alter the ROV's design, making it far simpler and less capable, and take it to sea untested. Maybe they would not be able to find gold this year, maybe not even explore the ship carefully, just retrieve an artifact and bring it to the surface to take to court.

The whole thing would cost the partnership an extra $1 million. But the partners felt that if they didn't spend the million dollars now, their dreams of recovering anything from the *Central America* would die.

They decided to move forward. At the end of May 1987, Tommy's recovery ship, the *Nicor Navigator,* put to sea, under the command of Captain Bill Burlingham. On the back deck sat a stack of assorted parts, the makings of an ROV they *hoped* would dive to the bottom and retrieve an artifact.

By June 10 an anaemic version of the hefty recovery vehicle Tommy had envisioned had been assembled with lights and video and a close-in sonar. They headed straight to the A2 site and deployed the vehicle on the ocean floor. To their elation, all the hours spent on ripping open crates of parts and assembling them on a pitching and rolling deck had produced a robot that performed exactly as it was supposed to.

However, trying to find something 2740 metres underwater with a camera when you can see only seven metres ahead in the dark is tough. To use Mike Williamson's analogy, it's like being on top of the Empire State Building trying to snag small objects on the street below with dental floss.

When they finally located the wreck and saw her ghostly image glide by, everyone was thinking the same thing. *Why does the site look so clean? Where is the coal?* The *Central America* had sunk with hundreds of tonnes of coal still in her hold, and yet there was not one lump of coal visible anywhere.

Tommy called off the dive. A2, it appeared, was just an anony-

mous wooden shipwreck. With the threat of competition a pressing factor now, they searched their sonograms for the next likely target. Site H — Hotel — stood out from all the others.

This was a site they had scanned after Tommy insisted they finish searching the lower probability cells to the east. Now, as their ROV moved above the wreck, they saw the wisdom of Tommy's decision. Scattered around the site were thousands of tiny bright reflections that might well be chunks of hard coal. If it was the *Central America,* next they had to go down and retrieve an artifact to take to court. And quickly.

Just before midnight on June 30, a clear night with stars shimmering, they saw a glow along the horizon to the northeast: the lights of a ship moving slowly back and forth in the area.

Dangerous Manoeuvre

THE OTHER captain identified his ship as the *Liberty Star,* out of Cape Canaveral. She had been chartered by the trustees of Columbia University, New York.

No longer did Tommy have to wonder who the competition might be. This was it. He knew Columbia's Lamont-Doherty Geological Observatory controlled the other existing deep-water SeaMARC. The danger was that the *Liberty Star* might pass its SeaMARC close enough to image the wreck at Hotel. Tommy knew from his lawyers that if another salvager managed to image the wreck site, it could compromise his rights to it.

Tommy could have avoided these problems if he followed one piece of advice that someone offered: *Fake the artifact. Get some driftwood, tie it to the vehicle, bring it back up and get the court to award you the salvage rights to the wreck.*

Tommy's comment was, "The project will be so scrutinized all the rest of its life that we would never get away with anything." Out of all the bad seeds he had seen treasure hunters sow, deception was the most costly, because once it germinated, it became uncontrollable and strangled the entire organization. So he had to beat the *Liberty Star*'s scanner to the wreck; he had to put the ROV down and retrieve an authentic artifact.

The vehicle had now grown from a helpless creature that could barely see and hear into a 5½-tonne machine with five cameras for eyes, a sonar for ears, an 81.5-kilo unit to talk, thrusters to walk, a 27-kilo manipulator to pluck, a 13.5-kilo brain to command, hundreds of kilos of battery boxes for a heart, and thousands of metres of hydraulic hoses and electrical cables, the arteries and nerves to connect it all.

But when they tested it on

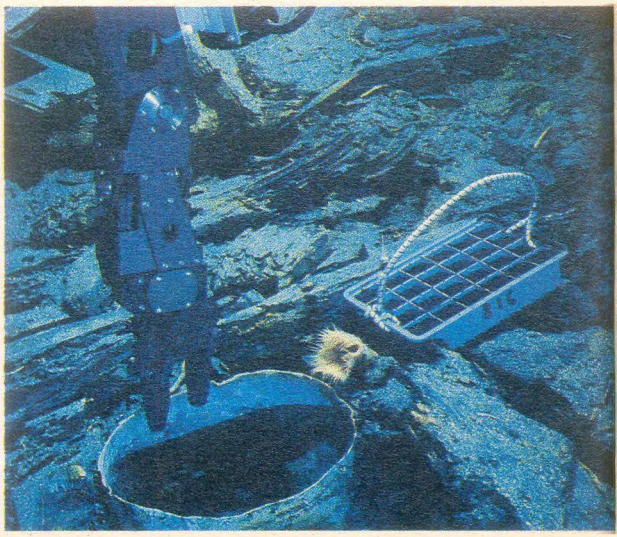
deck, circuit breakers blew, signals scrambled inside the tether cable, and the manipulator hung like a broken limb. As a substitute, a technician affixed a specially designed wire scoop to the front of the ROV. By the night of July 3, it still was not ready to go to the bottom, yet sometime the next day the *Liberty Star* would be on top of site Hotel.

"Early tomorrow, we drop it," announced Tommy. "We have no choice."

When the ROV reached the bottom, the cameras focused on the piece of debris they would present to the court: a lump of coal from the site. The team running the ROV waited until the pile was only a few metres away, then let the vehicle drop fast and hard. The monitors exploded with sediment roiling through the water.

It was now ten o'clock in the morning. *Liberty Star* was tracking back and forth. Tommy waited until she was executing a turn, then lifted the dripping ROV from the water. The mechanical arm was still stuck out in its reach position, the jaws frozen open with nothing inside.

When the ROV was swung to the deck, someone spotted something shiny and black lodged in the stainless-steel screening along the bottom of the ROV. Bob Evans grabbed it — a hunk of anthracite coal almost 15 centimetres across. It was obvious that it had come from a wreck at the bottom of the sea, for cemented to it were several white marine worm tubes.



Now that they had their artifact, they would have to get it to the courthouse immediately so that the judge could award them full rights to the wreck. The only problem was that the courthouse was in Norfolk, 645 kilometres away, and the *Liberty Star* was circling the wreck site like a shark. They couldn't leave.

Tommy had an idea. He radioed their supply pilot, Steve Gross, who flew a Seabee plane out of

North Carolina. The plan was simple: Tommy would have the artifact hanging off the stern on breakable line. Gross would align his Seabee parallel with the ship, ease down to a metre off the water, drop his speed to slow cruise, fly within a metre of the ship, snag the artifact with a grappling hook trailing 30 metres behind the plane, then climb as quickly as possible.

Bob packed the lump in a large plastic mayonnaise jar full of plastic-foam peanuts, and wrapped the jar in layer after layer of duct tape, incorporating a harness they could use to string the whole package onto a thin nylon rope.

They made a loop of rope 60 metres around. This would be stretched from the ship 30 metres out to a rubber raft. The bottom part of the loop would be loose, with the mayonnaise jar in the middle, and the top part of the loop would be stretched taut so Gross could snag it with the grappling hook. The loop would be secured at either end by thin, breakable fish line.

When Gross arrived, he circled in his aircraft. Tommy got into the rubber raft with two crew members and 3.5 metres of PVC pipe to serve as support for the rope as it stretched between the ship and the raft.

As always, sharks followed the raft out and circled it, two metres, unpredictable and known maneaters. Tommy had to hold the nylon rope as taut as possible at the tip of the PVC pipe while trying to stand up in the raft that was rocking in the seas.

Bob, watching, wondered what would happen to the project now if a little confusion in the swells suddenly tossed Tommy into the ocean and the sharks had him for a snack.

Gross came in low, the grappling hook turning and twisting in the air 30 metres behind him. Tommy held the pole as high as he could. When the hook hit the rope, the thin fish line popped at either end. Gross pulled back on the wheel and was heading for shore even before the nylon stopped singing. Trailing behind him was the precious lump of coal on its way to the Norfolk courthouse.

Good News, Bad News

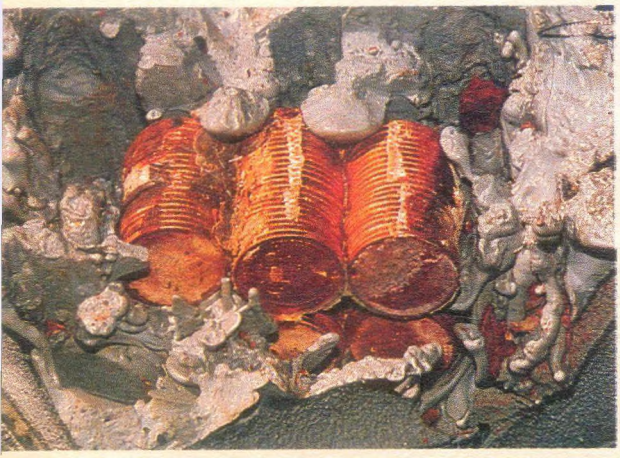
FEDERAL District Judge Richard Kellam awarded Columbus-America salvage rights to the Hotel wreck site, and with the *Liberty Star* no longer a threat, Tommy could concentrate on exploring the wreck.

By the time the Columbus-America team headed back for shore that autumn, they had plucked some tantalizing artifacts off the ocean floor: a child's white mug engraved with pictures and maxims from Ben Franklin's *Poor Richard's Almanack,* still popular in the mid-

19th century, and a tiny porcelain jar containing lady's cold cream, in which they found a fingerprint and a strand of chestnut-coloured hair.

But over $4 million was already spent, and in some of the partners' eyes, no matter how extraordinary his scientific accomplishments, Tommy had nothing to show for it but a bunch of dishes and a lump of coal.

To explain the situation to the partners, Tommy drafted a long



upbeat letter. He emphasized two key points: they had a vehicle that could do what no other vehicle had ever done in the deep ocean; they had also persuaded a judge to assume jurisdiction over a wreck 250 kilometres at sea and grant Columbus-America an injunction over that wreck. Tommy needed at least $3.5 million to continue the project.

Williamson had stored all of the targets from the sonar search on an optical disc. As part of the group's yearly review of data collected at sea, Bob went back through every sonar image from day one of the search, re-examining every unknown object.

Eventually he came to the high-resolution image of site F, or Foxtrot. Originally Williamson and his crew had dismissed it as a geological formation. Now as Bob called up Foxtrot, it surprised him. "When I saw this image coming up," said Bob, "I thought ... this might be a shipwreck ... maybe not only a shipwreck, it could be *the* shipwreck."

Once that thought hit him, alternating waves of frustration and elation washed over him. If what he saw truly was the *Central America,* that meant they had spent 115 days and millions of dollars searching the wrong site.

Bob showed the image to Tommy. He agreed the site was strikingly similar to Hotel. He decided to make Foxtrot the first equipment test site for the coming season before they moved on to Hotel.

Once again Tommy's partners stepped in to provide the money they needed. At this point, the pressure was mounting. Another failed attempt to find the *Central*

America would mean two lost years in a row.

End of the Search

ON THE morning of September 11, 1988, precisely 131 years after the *Central America*'s giant paddle wheels had stopped, the expedition launched its more sophisticated ROV down to the Foxtrot site for the first time. Then they had lunch while waiting the hour and a half it took to lower the vehicle to the bottom.

When they returned to the control room, John Moore, a sonar operator, flew the machine over the ocean floor. Within an hour he called out, "I'm getting sonar action!" Then he added excitedly, "I'm getting more. We've got a biggie here!"

Everyone's eyes were glued to the TV monitors. Suddenly, a huge bulbous shadow appeared at the lower left corner of the monitor. Someone yelled, "Look at this! Look at this!"

Bob Evans looked up. "Whooaa."

Then Tommy yelled, "Oh, my God!"

A huge paddle wheel was easing into view. Its bottom portion was partially buried in silt, iron spokes fanning out from the centre; it cast dark shadows onto the sand.

For the next four hours the vehicle waltzed about Foxtrot. The wreck site looked like a junkyard in winter, serene, buried in white. Only the junk was a pile of old engines and boilers and water tanks and gears, and the "snow" was deep-ocean sediment. They were hovering above a part of the wreckage when photographer Milt Butterworth said, "What's that? It looks like a bell." But they would have to wait to be sure. It was three o'clock in the morning, and they were all exhausted.

Five days later, during another search, the robot scooped up some sediment and brought it up. Bob carried it to his lab, where he gently placed part of it in a petri dish and dripped hydrochloric acid on it. This would dissolve the calcium carbonate, the microscopic shells of plankton, and uncover what was hidden.

The next afternoon, Bob studied the petri dish under a microscope, poking through the remains with a pair of tweezers. At first everything seemed either brown or grey or black. Then at the edge of the dish he saw a bright fleck of yellow.

Bob called Tommy into his lab to examine the speck. But even if it did turn out to be gold in later tests, they both knew that the only thing that would conclusively say "This is the wreck of the *Central America*" was the ship's bell.

A few days later, one member of the ROV team relocated the bell they'd seen earlier and teased it into a basket, which the ROV brought to the surface.

After rinsing down the bell with

fresh water and brushing it off, they read in a band around the top: "Morgan Iron Works, New York" followed by a series of digits. They could make out half of the number "5" and right next to it the number "3."

They knew 1853 was the year the vessel set to sea with her new engines, which, they also knew, were cast at the Morgan Iron Works in New York.

This was the *Central America*.

A Glittering Garden

THEY WERE were getting deeper into autumn, which meant their season was growing shorter and the weather worsening. They now faced a daunting job: finding gold in a complex field of debris covering an estimated four hectares.

As Bob, Milt Butterworth and Milt's assistant, John Doering, scrutinized photographs of the wreck site, they saw the tricks of colour and shape that could, for instance, make a chunk of wood appear to be a mottled bar of gold. To complicate matters, iron oxide bleeding from 635 tonnes of corroding metal drifted through the water, staining objects a yellowish-orange.

On September 27, despite seas rearing up to 2.5 metres, they launched their camera-laden vehicle at 9:30 in the morning. It was sent roaming around the wreck shooting images until 5pm.

After the machine was back on the surface, Doering began developing the film. He found that the entire cassette taken by one camera had somehow not come out.

He was so disgusted that he didn't even want to bother developing the cassette from the other camera. But he did. After the film was dry, he laid it on a viewing table and placed a magnifying glass over one of the pictures. Glistening in front of his eyes was the most spectacular sight he had ever seen.

"It was just ... it was just ... *covered* with gold!" he remembered. "I couldn't believe it! I did a double take, and then I started looking at the other pictures, and there was just one right after another. It was just loaded. Oh, it was incredible! My heart was actually pounding. It looked like a treasure story that Walt Disney would put together. Stacks of coins and bars of gold of every size and shape are just sitting there!"

Doering picked up that 1.5-metre strip, grabbed the magnifier, and took the steps two at a time up to the next deck, where he found Tommy and Barry in the communications room. He handed the strip to Tommy, who held it up to the light.

Doering thought he heard Tommy say something like, "Boy, I never thought ..." Then Doering heard some yahoos and yippees.

On October 1, they launched the ROV to shoot more photos of

the piles of gold. They eased the vehicle lower and settled in next to an area Tommy had selected to begin their photography. They aimed the forward thruster downwards and dispatched a gentle wash of water to blow away the cover material. The sediment was thin, but when the wake of the thruster hit, the sediment exploded upwards, swirling into clouds, blotting out the rotted timbers, turning monitors white. For several minutes the technicians could see nothing but roiling sediment. Then the picture on the monitors began to clear and slowly revealed an incredible scene: the treasure of the *Central America*.

"The bottom was carpeted with gold," said Tommy. "Gold everywhere, like a garden. Gold growing out of everything, embedded in all the wood and beams. Some of the bars formed a bridge... Then there was a beam with coins stacked on it, just covered. You couldn't see the top of the beam, it had so many coins on it."

Apart from a tiny squat lobster carefully picking its way across piles of coins, the scene lay perfectly still. A camera was focused on a coin.

"Wow," said Tommy. "Read that date."

The camera was moved slightly back to the right. There stood a coin on edge, face-on, just as bright, just as pure, just as lustrous as the day it left the San Francisco

NEXT MONTH

How to Flatten Your Tummy
Bothered about belly fat? Here are five strategies to help you have a flat stomach

This Lie Will Not Die
For nearly a century this evil manuscript has united bigots and, in the process, claimed millions of lives

Is the Tiger Doomed?
Unless something is done soon, Asia's wild cats will be gone forever

Ace That Job Interview
Tough interviewers reveal their most frequent questions — and suggest how you can handle them

Book Section:
Full Circle: The Dan Jansen Story
Speed skater Dan Jansen tells the poignant story of how he faced his final chance to make Olympic history

IN READER'S DIGEST FOR AUGUST

Mint. It was emblazoned with the bust of Lady Liberty, lovely in profile, her hair crossed with a tiara and cascading in ringlets down her neck, 13 stars surrounding her, and her ringlets stopping just short of the date "1857."

For three hours they continued to photograph the scene. Tommy wasn't ready to bring in any treasure yet. He wanted the site fully studied and documented before they touched a single coin. And what had begun years before with a professor's question: "How are we going to explore the deep ocean?" had ended with a spectacular answer: "Like this."

Editors' Note: Since that first day of discovery, Tommy Thompson and his crew have recovered over a tonne of gold. As bullion alone, it is worth many millions of dollars, but its value to collectors will be much greater. A single 1857 double-eagle coin in excellent condition could be worth close to $30,000.

The careful scientific methods employed by the Columbus-America Discovery Group have yielded an equally rich trove of historical artifacts. One of the first to be brought to the surface was a trunk that contained a well-preserved shirt, which bore the markings of "A. I. Easton" — Ansel Easton. Also recovered was a double-framed portrait of the vibrant newlyweds, Addie and Ansel. Like their owners, these possessions miraculously survived the sea to tell a haunting tale.

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Do or Diet

FED UP with trying to lose weight on my own, I contacted the local chapter of a national weight-loss, self-help group. When a woman with a friendly voice came on the phone, I launched into my diet frustrations.

Before I could get very far, the woman said, "Could you hold on a minute, please? I've got to go and wash all this chocolate off my hands."

— Laurie Hansen

Shake, Rattle, Roll

SHOWING some visitors around my piggery, I was explaining how some pigs develop funny habits, such as picking up stones and rattling them in their mouths.

Just then a little pig within reach started to rattle. Grabbing him by the back leg, I held him upside down. To the amazement of my visitors and myself, out dropped two ten-pence pieces — the original piggy bank.

— F. Russell